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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,864	09/29/2003	Ralph Kurt	081468-0306164	8185
909	7590	05/19/2006		
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			EXAMINER CHACKO DAVIS, DABORAH	
			ART UNIT	PAPER NUMBER

1756

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/671,864

Applicant(s)

KURT ET AL.

Examiner

Daborah Chacko-Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-2, 4-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2 and 4-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/05, 03/06.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 11-20, are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 6,225,032 (Hasegawa et al., herein after referred to as Hasegawa).

Hasegawa, in the abstract, in col 3, lines 60-67, in col 4, lines 1-67, in col 5, lines 58-67, in col 6, lines 12-67, in col 7, lines 1-13, and lines 38-67, in col 8, lines 1-24, in col 11, lines 10-39, in col 12, lines 4-19, in figure 2, discloses a lithographic system comprising a light source that provides a laser beam ( a radiation system), a support (driving device) that supports the mask, a substrate table (reference 18, stage) that supports the wafer, an irradiation source that irradiates a resin blank (resist coated substrate) through a mask, wherein the laser beam irradiates gaseous molecules of tetrafluoromethane (positioned near the discharge port) in the chamber (the apparatus contains the composition), and gas is introduced via ports so as to flow in the path of the laser beam through the space in the laser processing apparatus i.e., the space or portion between the light source and the wafer that includes at least a projection optical system (reference 15), and a laser oscillator; the CF<sub>4</sub> gases are irradiated with ArF laser (EUV source, the activating device) so as to activate the fluorine containing substance

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(claims 1, 4, 11-17, and 19-20). Hasegawa, in col 9, lines 9-60, discloses that the fluorine-containing compound is encapsulated in a microporous media (sponge) (claim 18).

3. Claims 1, 2, 8-10, and 19, are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 6,252,648 (Hase et al., hereinafter referred to as Hase).

Hase, in the abstract, in col 2, lines 47-54, in col 3, lines 32-67, in col 4, lines 1-59, and in figures 1-2, discloses an exposure apparatus (lithographic apparatus) comprising a laser light source (radiation system), an illumination optical system, a support that supports the reticle (reference 3), a substrate support that supports the substrate (wafer), a projection system (reference 5) that projects the patterned beam onto a wafer via a reticle (target portion of the substrate) wherein the space from the light source lens system to the wafer in the exposure system includes a composition containing oxygen, inert gases such as helium or neon, and nitrogen, and upon laser irradiation producing oxides of organic compounds (reactive species) (claims 1-2, 8, 10, and 19). Hase, in col 4, lines 38-59, discloses that the oxygen and nitrogen is mixed in the projection system and impinged with a laser light treatment that inherently produce oxides including oxides of nitrogen (claim 9).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,252,648 (Hase et al., hereinafter referred to as Hase) in view of Journal of Crystal growth 222 (2001) 452-458 (McGinnis et al, herein after referred to as McGinnis).

Hase is discussed in paragraph no. 3.

The difference between the claims and Hase is that Hase does not disclose that the one or more compounds include one or more nitrogen hydrides (claim 5). Hase does not disclose that the one or more compounds includes at least one of ammonia, diazine, hydrazine, and salts thereof (claim 6).

McGinnis, on page 452-453, discloses that the ammonia flux is introduced into the plasma atmosphere prior to exposing the substrate.

Therefore, it would be obvious to a skilled artisan to modify Hase by replacing the nitrogen plasma atmosphere with ammonia because McGinnis, in the abstract, discloses that the ammonia flux introduced into the plasma beam resulted in the inhibition of surface roughening and produced a relatively smooth substrate surface.

6. Claim 7, is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,252,648 (Hase et al., hereinafter referred to as Hase) in view of U. S. Patent No. 5,320,707 (Kanekiyo et al, hereinafter referred to as Kanekiyo).

Hase is discussed in paragraph no. 3.

The difference between the claims and Hase is that Hase does not disclose that

the one or more compounds include nitric acid (claim 7).

Kanekiyo, in col 23, lines 65-68, discloses that the nitric acid is introduced into the plasma to perform passivation processing on the laminate layers.

Therefore, it would be obvious to a skilled artisan to modify Hase by replacing the nitrogen plasma atmosphere with nitric acid because Kanekiyo, in col 23, lines 65-68, and in col 24, lines 1-2, discloses that nitric acid passivation enables the removal of residues on the laminate layer prior to development (washing processing).

### ***Response to Arguments***

7. Applicant's arguments, see Remarks on page 12, paragraph nos. 3-4, filed March 6, 2006, with respect to claims 1-4, 8-17, and 19-20, have been fully considered and are persuasive. The 102 rejection of He et al., has been withdrawn.

8. Applicant's arguments filed March 6, 2006, with respect to the rejection of Hasegawa et al., have been fully considered but they are not persuasive. The 102 rejection of Hasegawa et al., made in the previous office action (paper no. 0909) is maintained.


A) Applicants argue that Hasegawa et al., does not disclose a space containing either a laser or a projection optical system that contains a composition.

Hasegawa, in col 6, lines 47-60, in col 7, lines 1-65, in col 8, lines 1-14, discloses that the gaseous molecules are blown to the processing part of the laser processing apparatus that includes a laser beam, and a projection optical system.

**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

  
May 16, 2006.

  
**JOHN A. MCPHERSON**  
**PRIMARY EXAMINER**